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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/653,215

09/03/2003

Jin-Hyung Kim

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EXAMINER

CRUZ, IRIANA

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/653,215	Applicant(s) KIM, JIN-HYUNG	
	Examiner IRIANA CRUZ	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01/25/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.
2. Applicant requested a translation copy of the cited document Noritomo and the copy have been supplied.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noritomo et al. (JP Publication Number 2002-22961) in view of Luby et al. (US Publication Number 2002/0129159 A1).

Regarding **Claim 1**, Noritomo'961 shows a wireless image forming apparatus to wirelessly transmit and receive data with an external apparatus (**i.e., information equipment that transmits data to a printer by radio communication/wireless. See Paragraph 1 and See Figure 3 elements 1 and 200-202**), comprising: a wireless communication unit to receive image data transmitted from the external apparatus (**i.e., information equipment that transmits data to a printer by radio communication/wireless. See Paragraph 1**), demodulate the received image data, output the demodulated image data (**i.e., demodulation of signal. See Paragraph 30**),

detect a wireless reception sensitivity of the image data **(i.e., measurement means that measure the reception sensitivity of the radio communication/wireless. See Paragraphs 7-9)**, and output wireless reception sensitivity information corresponding to a result of detection **(i.e., measurement means that display/output the reception sensitivity of the radio communication/wireless. See Paragraphs 7-9)**; and an image forming unit to change a time-out value based on the wireless reception sensitivity information **(i.e., the time required for the transmission of the data to be completely transmitted is calculated and it can be re-calculated through the transmission. See Paragraphs 10 and 12-13).**

Noritomo'961 (although showed a time-out for when the transmission will end) fails to show a method that stops the reception of a data from the external apparatus as a time-out when a period of non-reception of the data exceeds the time-out value during the transmission of the image data from the external apparatus.

Luby'159 teaches a method that stops the reception of a data from the external apparatus as a time-out when a period of non-reception of the data exceeds the time-out value during the transmission of the image data from the external apparatus **(i.e., when the time-out values expires the transmission of the packets/data wirelessly are automatically stopped. See Paragraph 119).**

Having the system of Noritomo'961 and then given the well-established teaching of the Luby'159, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system as suggested by the combination of Noritomo'961 with the teachings of Luby'159 by stopping the reception of a data from

the external apparatus as a time-out when a period of non-reception of the data exceeds the time-out value during the transmission of the image data from the external apparatus, in order to improve the system by stopping the reception when needed to prevent errors in the data.

Regarding **Claim 2**, Noritomo'961 shows the wireless image forming apparatus wherein the wireless communication unit comprises: a wireless communication module to wirelessly receive the image data and demodulate the data (**i.e., information equipment that transmits data to a printer by radio communication/wireless. See Paragraphs 1 and 30 and See Figure 3 elements 1 and 200-202**), detect the wireless reception sensitivity of the image data (**i.e., measurement means that measure the reception sensitivity of the radio communication/wireless. See Paragraphs 7-9**), and output the reception sensitivity information based on the detected wireless reception sensitivity (**i.e., measurement means that display/output the reception sensitivity of the radio communication/wireless. See Paragraphs 7-9**); a storage unit to temporarily store the demodulated image data and output the stored data, the storage unit storing a control program to detect the wireless reception sensitivity (**i.e., a transmission and reception memory stores the data. See Paragraph 31 and See Figure 4 element 58a**); and a central processing unit to control the communication of the data and the detection of the wireless reception sensitivity of the wireless communication module by loading the control program from the storage unit (**i.e., the digital signal processor. See Figure 3 element 101**), and output the reception sensitivity information input from the wireless communication module (**i.e.,**

measurement means that display/output the reception sensitivity of the radio communication/wireless. See Paragraphs 7-9).

Regarding **Claim 3**, Noritomo'961 shows a wireless image forming apparatus wherein: the wireless communication module outputs the reception sensitivity information by repeatedly checking the wireless reception sensitivity of the image data for a predetermined temporal interval in accordance with a control signal of the central processing unit while the image data is being transmitted (**i.e., the time required for the transmission of the data to be completely transmitted is calculated and it can be re-calculated through the transmission. See Paragraphs 10 and 12-13).**

Regarding **Claim 4**, Noritomo'961 shows a wireless image forming apparatus further comprising: an input/output interface unit to convey the demodulated image data and the detected reception sensitivity information to the image forming unit (**i.e., demodulation of signal. See Paragraph 30**), and receive feedback information with respect to a printing operation from the image forming unit, and then wirelessly transmit the feedback information (**i.e., the time required for the transmission of the data to be completely transmitted is calculated and it can be re-calculated through the transmission. See Paragraphs 10 and 12-13).**

Regarding **Claim 5**, Noritomo'961 shows a wireless image forming apparatus wherein the image forming unit performs a printing operation with respect to the image data transmitted before the timeout (**i.e., information equipment that transmits data to a printer by radio communication/wireless and then the data is printed. See Paragraphs 1, 7 and 30 and See Figure 3 elements 1 and 200-202).**

Regarding **Claim 6**, Noritomo'961 shows a wireless image forming apparatus wherein the image forming unit does not perform a printing operation with respect to the image data transmitted before the time-out **(i.e., when a degradation in the reception is detected the user can decide to not print anything. See Paragraphs 9-10).**

Regarding **Claim 7**, the combination of Noritomo'961 and Luby'159 shows a wireless image forming apparatus wherein the image forming unit comprises: a storage unit to temporarily store time-out information corresponding to the reception sensitivity information input from the wireless communication unit and the demodulated image data **(i.e., measurement means that display/output the reception sensitivity of the radio communication/wireless, the digital signal processor, the time required for the transmission of the data to be completely transmitted is calculated and it can be re-calculated through the transmission. See Paragraphs 7-10 and 12-13 and See Figure 3 element 101 in reference Noritomo'961)**; a controlling unit to change the time-out value in accordance with the time-out information corresponding to the reception sensitivity information stored in the storage unit **(i.e., the time required for the transmission of the data to be completely transmitted is calculated and it can be re-calculated through the transmission. See Paragraphs 10 and 12-13 in reference Noritomo'961)**, and stop the data reception when the period of non-reception of the image data exceeds the time-out value **(i.e., when the time-out values expires the transmission of the packets/data wirelessly are automatically stopped. See Paragraph 119 in reference Luby'159)**; and a printing unit to print the image data based on the control signal of the controlling unit **(i.e., information**

equipment that transmits data to a printer by radio communication/wireless and then the data is printed. See Paragraphs 1, 7 and 30 and See Figure 3 elements 1 and 200-202 in reference Noritomo'961).

Regarding **Claim 8**, Noritomo'961 shows a wireless image forming apparatus wherein: the controlling unit uses the time-out information stored in the storage unit to determine the time out value such that the time-out value is in inverse proportion to the wireless reception sensitivity **(i.e., the time required for the transmission of the data to be completely transmitted is calculated and it can be re-calculated through the transmission. See Paragraphs 10 and 12-13).**

Regarding **Claim 9**, Noritomo'961 shows a wireless image forming apparatus wherein the image forming unit further comprises: an input/output interface unit to receive the image data and the reception sensitivity information from the wireless communication unit **(i.e., information equipment that transmits data to a printer by radio communication/wireless. See Paragraph 1 and See Figure 3 elements 1 and 200-202)** and to output the feedback information with respect to the printing operation to the wireless communication unit **(i.e., measurement means that display/output the reception sensitivity of the radio communication/wireless. See Paragraphs 7-9).**

Regarding **Claim 10**, Noritomo'961 shows a wireless printing method comprising: changing a time-out value in accordance with a wireless reception sensitivity of a wirelessly transmitted image data and performing printing of the transmitted image data **(i.e., measurement means that measure the reception sensitivity of the radio communication/wireless and display/output the reception sensitivity of the radio**

communication/wireless where the time required for the transmission of the data to be completely transmitted is calculated and it can be re-calculated through the transmission. See Paragraphs 7-10 and 12-13).

Noritomo'961 fails to show the method that stops a reception of the image data when a period of non-reception of the image data exceeds the time-out value.

Luby'159 teaches a method that stops a reception of the image data when a period of non-reception of the image data exceeds the time-out value **(i.e., when the time-out values expires the transmission of the packets/data wirelessly are automatically stopped. See Paragraph 119).**

Having the system of Noritomo'961 and then given the well-established teaching of the Luby'159, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system as suggested by the combination of Noritomo'961 with the teachings of Luby'159 by stopping a reception of the image data when a period of non-reception of the image data exceeds the time-out value, in order to improve the system by stopping the reception when needed to prevent errors in the data.

Regarding **Claim 11**, Noritomo'961 shows a wireless printing method wherein the changing the time-out value in accordance with the wireless reception sensitivity of the wirelessly transmitted image data comprises: detecting the wireless reception sensitivity of the transmitted image data at predetermined temporal intervals; reading time-out information corresponding to the detected wireless reception sensitivity; varying the time-out value in accordance with the read time-out information; and determining

whether the reception and printing of the image data is complete **(i.e., measurement means that measure the reception sensitivity of the radio communication/wireless and display/output the reception sensitivity of the radio communication/wireless where the time required for the transmission of the data to be completely transmitted is calculated and it can be re-calculated through the transmission. See Paragraphs 7-10 and 12-13).**

Regarding **Claim 12**, Noritomo'961 shows a wireless printing method further comprising: setting up the time-out information corresponding to the wireless reception sensitivity **(i.e., the time required for the transmission of the data to be completely transmitted is calculated and it can be re-calculated through the transmission depending on the reception sensitivity. See Paragraphs 10 and 12-13);** and storing the set time-out information **(i.e., a transmission and reception memory stores the data. See Paragraph 31 and See Figure 4 element 58a).**

With regards to method **Claim 13**, the limitation of the claim 13 are corrected by limitation of claim 7 above. The steps of claim 13 read into the function step of claim 7.

With regards to method **Claim 14**, the limitation of the claim 14 are corrected by limitation of claim 6 above. The steps of claim 14 read into the function step of claim 6.

With regards to method **Claim 15**, the limitation of the claim 15 are corrected by limitation of claims 1 and 10 above. The steps of claim 15 read into the function step of claim 1 and 10.

With regards to method **Claim 16**, the limitation of the claim 16 are corrected by limitation of claim 5 above. The steps of claim 16 read into the function step of claim 5.

With regards to method **Claim 17**, the limitation of the claim 17 are corrected by limitation of claim 6 above. The steps of claim 17 read into the function step of claim 6.

Regarding **Claim 18**, Noritomo'961 shows a wireless image forming system, comprising: a terminal to send a printing request comprising image data (**i.e., information equipment that transmits data to a printer by radio communication/wireless. See Paragraph 1 and See Figure 3 elements 1 and 200-202**); a first wireless communication unit to receive the printing request from the terminal, and wirelessly transmit the printing request (**i.e., the computer send the request to the network where Bluetooth units can be found for the radio transmission to the printer. See Figures 1 and 3**); a wireless image forming apparatus comprising a second wireless communication unit to wirelessly receive the printing request and detect a wireless reception sensitivity of the printing request (**i.e., information equipment that transmits data to a printer by radio communication/wireless. See Paragraph 1 and See Figure 3 elements 1 and 200-202**); and an image forming unit, in communication with the second wireless communication unit, to form an image using the received printing request; vary a time out value in accordance with the wireless reception sensitivity (**i.e., measurement means that measure the reception sensitivity of the radio communication/wireless and the time required for the transmission of the data to be completely transmitted is calculated and it can be re-calculated through the transmission. See Paragraphs 7-10 and 12-13**).

Noritomo'961 fails to show an image forming system that stops reception of the printing request when a period of interruption of reception of the image data exceeds the varied time out value.

Luby'159 teaches an image forming system that stops reception of the printing request when a period of interruption of reception of the image data exceeds the varied time out value (**i.e., when the time-out values expires the transmission of the packets/data wirelessly are automatically stopped. See Paragraph 119).**

Having the system of Noritomo'961 and then given the well-established teaching of the Luby'159, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system as suggested by the combination of Noritomo'961 with the teachings of Luby'159 by stopping a reception of the image data when a period of non-reception of the image data exceeds the time-out value, in order to improve the system by stopping the reception when needed to prevent errors in the data.

Regarding **Claim 19**, Noritomo'961 shows a system further comprising: an access point to relay the printing request from the first wireless communication unit to the second wireless communication unit (**i.e., Bluetooth units. See Figures 1 and 3).**

Regarding **Claim 20**, Noritomo'961 shows a system further comprising: a plurality of terminals to send printing requests comprising image data; and a plurality of first wireless communication units, each corresponding to one of the plurality of terminals, to receive printing requests from the respective terminals, and wirelessly transmit the printing requests, wherein the second wireless communication unit

wirelessly receives the printing requests from the plurality first wireless communication units, and processes the printing requests in consecutive order (**See Figure 1**).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IRIANA CRUZ whose telephone number is (571)270-3246. The examiner can normally be reached on Monday-Friday 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Y. Poon can be reached on (571) 272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/King Y. Poon/
Supervisory Patent Examiner, Art Unit 2625

Iriana Cruz
Examiner
Art Unit 2625

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/I. C./
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